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ABSTRACT

This paper briefly reviews the literature on the common factors in effective college student retention programs, then presents a study assessing the impact of the institution's mission effectiveness as distinct from other determinants of student retention. The assessment of retention predictors and the effects of the school's mission were conducted at Barry University (Florida). Data sources for the study came from admissions records, standardized test scores, secondary school performance data, student academic records, and a survey of first-year students that determined their subjective experiences at the institution. Using logistics regression analysis, the study determined that strategies to improve first semester grades have the greatest impact on retention; however, institutional effectiveness in the academic area was but one determinant of grade point average, contributing only one-third of the variance. Academic preparation and student motivation had greater impacts on academic outcomes. Institutional academic effectiveness had less influence on retention than the community building and personal growth missions of the institution. The study determined that institutional effectiveness, by itself, cannot curtail attrition; but missions that differentiate the university from other schools have greater potential for creating commitment and encouraging retention. Contains 17 references. (GLR)

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The Impact of Mission Effectiveness on Student Retention

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Abstract

Institutional effectiveness is a planning and evaluation process for closing the gap between an institution's aspirations and its performance. Data from an urban, comprehensive university provide the data for a logistic regression analysis.

Results suggest that strategies to improve first semester grades have the greatest impact on retention. Since institutional effectiveness in the academic mission has only a modest influence on grades, effectiveness in realizing the social/psychological mission has a more powerful influence on retention than does effectiveness in the academic mission. Altogether, institutional effectiveness has a modest impact on retention.

Institutional effectiveness, by itself, cannot turn the attrition tide. However, improved retention is a significant incentive for institutional effectiveness, especially effectiveness in the affective aspects of the mission.

for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirty-Third Annual Forum of the Association for Institutional Research held at the Chicago Marriott Downtown, Chicago, Illinois, May 16-19, 1993. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Chair and Editor
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Purpose

Institutional or mission effectiveness is a planning and evaluation process for closing the gap between an institution's aspirations, as expressed in its Mission, and its performance, as ascertained by assessment. It has been motivated primarily by the demands of regional accrediting bodies and state legislatures. This paper shares much with other case studies that have searched for predictors correlated with student retention. The new contribution of this research is the attempt to assess the influence of mission effectiveness as distinct from other determinants of retention. If institutions had evidence that mission effectiveness is in their competitive self-interest, institutional effectiveness would be easier to sustain as a continuous process, even in this era of increasing resource scarcity. There is evidence that student perception of an institution's effectiveness does improve retention.

The fundamental goals of the institution are often enumerated in the mission statement of the institution. Institutional effectiveness is in fact a measure of the institution's compliance with the educational and social contract it has made with its students. In its *Criteria for Accreditation*, the Southern Association of Colleges and Schools states "the level of institutional quality depends not only on an institution's educational processes and resources, but also on the institution's successful use of those processes and resources to achieve established goals" (Southern Association of Colleges and Schools, 1992-1993, p.15).

Student perception of mission effectiveness has both a direct influence on retention and an indirect effect on retention through variables often identified as crucial in retention, e.g., first semester GPA. The indirectness of its influence may explain why the "fulfillment of the Mission" is not often cited as a key predictor of retention. Tinto writes,

> In the course of establishing a retention policy, institutions must not only discern the goals and commitments of entering students, they must also ascertain their own goals and commitments. Ultimately the question of institutional choice in the matter of the definition and treatment of student dropout is one concerning the purposes of

> institutional existence. It is, in effect, a question of educational mission (Tinto 1987, pp. 134-135).

The study of mission effectiveness is important in that it encompasses many areas of institutional performance that lead to academic integration, social integration, and institutional commitment. Tinto (1975) contends that student retention is closely tied to integration into the academic and social systems of an institution. Tinto writes, "concern for the education of students and their integration as full members in the social and intellectual life of the institution appear to be the two most important principles of successful retention programs" (Tinto, 1987, p. 187).

Institutional self-awareness and subsequent honest marketing of what it has to offer lead to more satisfied students. Students know what to expect from the institution. Satisfaction with an institution is tied to fulfilled or failed expectations. Noel, Levitz, Saluri and associates (1985) argue that

> prospective students should have a good understanding of the product the institution has to offer, including opportunities that the college experience will create; financing alternatives; skill development; and the social, psychological, and religious values inherent in the institution's mission (Noel et al., 1985, p. 183).

Review of the Literature

A view pervasive in much of the retention research is that student satisfaction is at the core of student retention, but various types of students have diverse needs and therefore require different approaches. While recognizing diversity, researchers do try to identify some common retention factors reviewed in this section. Common factors can be used as a basis for implementing effective retention programs which are gradually adjusted to meet the needs of the institution's students.

Initial Experience/Orientation Program

The first six weeks of the first semester at an institution is considered a crucial period in determining retention. The student's integration in the institution's academic and social environment is especially

affected by experiences in these weeks. The orientation program provided by the institution can be an important factor in the quality of the student's early experience (Ramist, 1981, p. 2).

Academic / Social Integration in the Institution

Vincent Tinto (1987) theorized that academic and social integration into the life of the institution lead to institutional commitment. Integration is a broad term that encompasses many components of the educational experience at an institution. Academic integration, measured by grades and perceptions of learning, involves both formal and informal experiences within the institution. Students experience formal integration in classrooms and laboratories. Meanwhile, the informal academic cultures that often develop are equally important in the integration of the student (Tinto, 1987, p. 106). Social integration encompasses the daily life and personal needs of the students. To a large extent, it involves activities that occur outside the classroom. Successful student integration will lead to more alumni involvement as well as a positive attitude about the institution being transmitted to new students. Although academic and social integration seem to refer to different experiences, they are highly interdependent.

Meeting Stated Goals (Mission)

It is important for an institution to be aware of the messages it sends students. Students lose confidence in the institution if it is not forthright in its publications, if students are not treated equally, or if the institution appears to lack a direction for growth. Likewise, if the institution's reputation and image in the community are not positive or if institutional self-esteem is low, students will develop less institutional commitment. The common theme is that students not satisfied with the institution's accomplishment of its stated goals were less likely to be retained (Beal and Noel, 1980).

Faculty-Student Interaction

Interaction between faculty members and students encourages retention. (Ramist 1981 ; Wilson, Gaff, Dienst, Wood, and Bavry 1975; Beal and Noel, 1980). A caring attitude by both

faculty and staff members is vital for retention. Levitz and Noel (1986) write, "in short, we need people working in frontline positions in our schools who have a mission, a burning desire, to help students meet their goals, master technical skills, and shape brighter futures" (p. 20). In his description of persisters at an institution, Noel (1976) found they established a relationship with a faculty member who cared for them as a person and reported satisfaction with an advisor who helped them beyond registration. In 1980, Beal and Noel established that "high-quality advising, counseling, and career planning services are rated as crucial retention factors" (p. 43).

Older Students

Older students enroll for fewer hours and study more (Farabaugh-Dorkins, 1991, p. 1-2). Older students are "more likely to drop out after a semester than younger students" (p. 7). Traditional-aged students enter with a similar range of experience while older students bring a greater variety of experience (p. 2). Further, older students often enter postsecondary education for different reasons than their youthful counterparts. (Farabaugh-Dorkins 1991; Greenfeig and Goldberg 1984; Lovacchini, Hall and Hengstler, 1985; Sewall, 1984).

GPA, Study Habits, Hours Enrolled, Intent to Leave

Metzner and Bean (1987) produced a study of commuter students of all ages. In it they found four variables significantly related to retention: the students' college GPA, study habits, hours enrolled, and intent to leave. Farabaugh-Dorkins (1991), testing a prior Bean and Metzner (1985) model, found older students, lower college GPA, and prior intent to leave college before degree completion are predictors of attrition.

Financial Difficulty

Surprisingly, the literature does not support the notion that financial difficulty is a factor that contributes to attrition: "Financial difficulty is the second most frequently cited reason for dropping out, but, after controlling for academic ability and motivation, there is almost no relationship between

income and attrition" (Ramist, 1981, p. 2). Lee Noel (1976), in describing the characteristics of persisters, found that there is not much difference regarding financial difficulties between persisters and leavers. Further, he found only a slight relationship between scholarship aid and retention.

In Defense of Dropping Out

Most authors assume that students *should* be retained. Hahn (1974) writes, "It is one thing to make education available to everyone, but an entirely different matter to see to it that everyone gets an education" (p. 36). He lists the standard arguments for continuing in education: "college degree recipients enjoy higher standards of living, are more socially and occupationally mobile, and are more likely to have children who go to college" (p. 37). But then he asks what many academicians find unspeakable-- is there any relationship that correlates education with happiness or the ability to find meaning in life? Permitting a student to drop out of the educational process without feeling stigmatized is in fact a high form of respecting the individuality of each human being. Respect for stopping out is more harmonious with the idea of education as a lifelong process.

Theoretical Framework

The theoretical framework described by the flow chart in Figure 1 is largely inspired by Tinto and motivated the choice of predictors investigated in this study. The retention decision is an outcome of a complex process that creates institutional commitment and individual intent. Commitment and intent are determined by four conceptual variables: academic integration, social/psychological integration, institutional/mission effectiveness, and environmental changes external to the institution and subsequent to the student's initial enrollment. Academic outcomes are a product of three forces: (1) the student's academic preparation and motivation, (2) the student's personal goals and expectations of the institution, and (3) institutional effectiveness. Personal goals and expectations of the institution are determined by the student's background and institutional

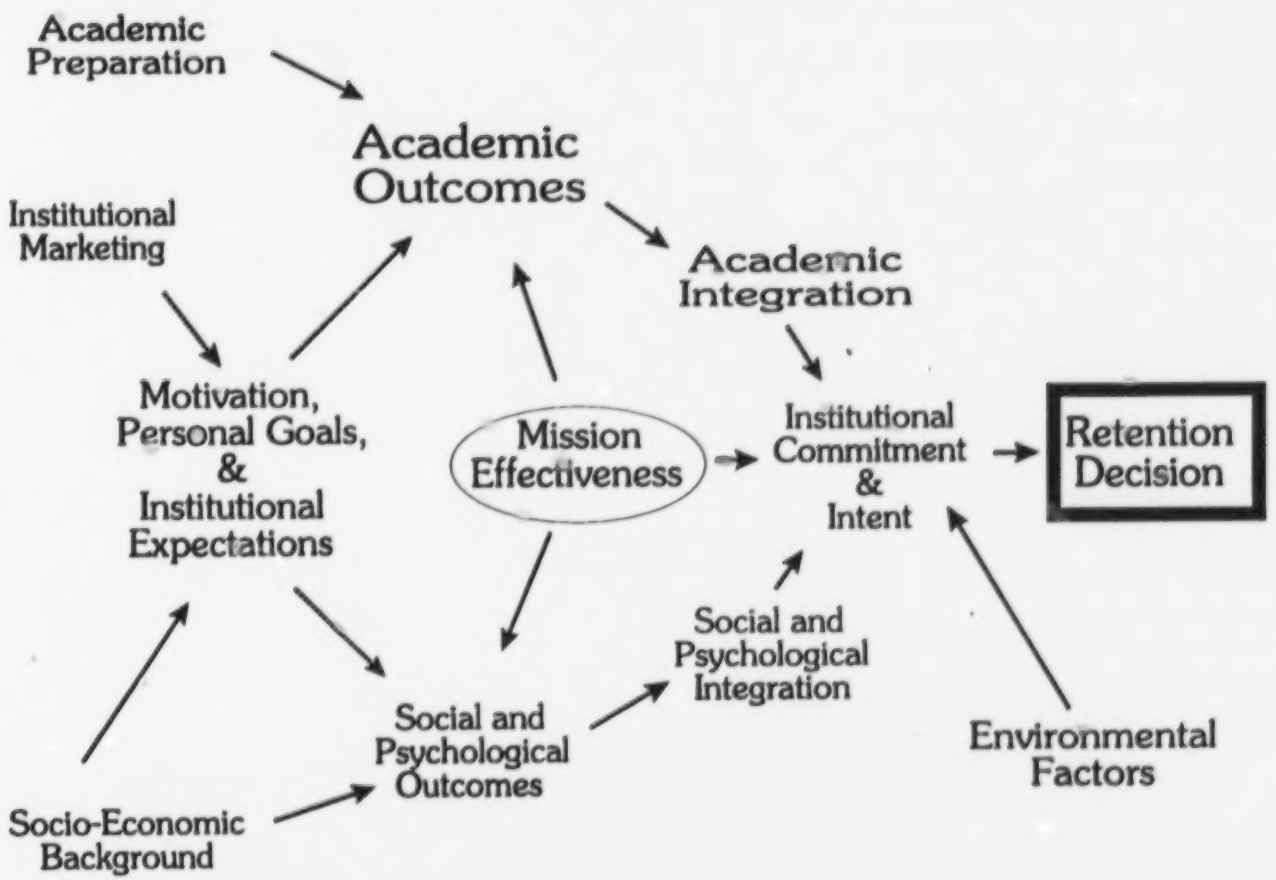

Fig. 1. A Theoretical Model of the Retention Decision

marketing. Like academic outcomes, social/psychological outcomes are a product of the student's goals, expectations, and background.

Methodology

Introduction to Logit Regression

Ordinary least squares (OLS) regression is not appropriate for analyzing the determinants of a dichotomous dependent variable (Y) like retention. Two problems stand out. First, if the expected value of Y is close to 1, then the error terms will all be large (if observed Y=0) or small (if observed Y=1). All the error terms will be approximately 0.5 if the expected value of Y is close to 0.5. This dependence of the error terms on predicted Y makes the assumption of constant variance untenable. Consequently, while the estimated OLS coefficients would be unbiased, the standard errors would be incorrectly estimated. Second, any linear model eventually predicts values of Y greater than 1 or less than 0, impossible predictions since the dependent variable is interpreted as the probability of retention. The function estimated should approach the {0,1} boundaries asymptotically.

Logit regression[1] overcomes these problems by transforming the dependent variable into the natural logarithm of the odds of retention. If P is the probability of retention, then the odds favoring retention are: P / (1-P). For the sample of students analyzed in this paper, P=0.73 so the odds or retention are 2.7 or nearly 3 to 1. Since the logit is a linear function of the predictors (X variables), the probability of retention is a nonlinear function of the predictor variables, making it difficult to interpret the regression coefficients in terms of the probability of retention.

Since the magnitude of the estimated coefficient β_j, does not allow easy judgment about the influence of the predictor X_j on the probability of retention alternative measures of impact are needed. One interpretation of the coefficient, is that a unit increase in X_j multiplies the odds favoring retention by e^{β} if all the other X's stay the same. e^{β} is called the **odds ratio** and is often used comparatively to describe the strength of an effect. The stronger the relation between X and

retention, the farther the odds ratio will be from 1. Alternatively, the effect of X can be described in terms of probabilities rather than odds. The effect of X_j on the probability of retention depends on the values of the other X's. The effect of a unit change in X_j on the predicted probability of retention, assuming all other X's are at their mean values, is reported as the "**derivative**" of X_j.

Goodness-of-fit measures are also less easy to interpret than with OLS regression. One possibility is the **likelihood ratio statistic**, distributed χ^2 with degrees of freedom equal to the number of predictors. This statistic tests the hypothesis that all coefficients except the constant are zero. **McFadden's Rho-squared** is intended to mimic an R-squared in that it is always between 0 and 1, and a higher Rho-squared corresponds to a better fit. However, it tends to be much lower than R-squared with values between 0.2 and 0.4 considered satisfactory.

The success of the model in classifying students can be judged by the proportion of the sample for which the retention decision is correctly predicted. The **success index** is the gain the model shows over a purely random model which assigns the same probability of retention (the sample mean, 0.73 in this case) to every student in the sample. Finally, the model must be judged by the extent to which the estimated parameters are not unduly influenced by a handful of unusual observations. The parameter estimates in this study were improved by deleting 6 "high influence" observations out of a sample of 490.

Data Sources

Data used to predict retention come from three sources. The students' admissions records yield demographic information, standardized test scores, and secondary school performance data. Another source is the students' academic record at Barry including grades, major, and often placement test scores. The final source is survey data on the students' perceptions of their subjective experiences at the institution. Given the subtle nature of the mission, most of the evidence about mission effectiveness comes from the survey data. Two surveys were given to first-year students in the initial

year of the study. A follow-up mailing yielded response rates of 54% and 39% for the two surveys. Table 1, on the following page defines the variables used in this study.

Measures of Mission Effectiveness

To understand what institutional effectiveness means at Barry it is necessary to look at elements of the mission. In part, Barry's mission statement says

> Barry University is an independent, . . . Catholic institution . . . which fosters studies within the Judeo-Christian and Dominican traditions. We seek to provide a learning environment which challenges students to accept intellectual, personal, ethical, spiritual, and social responsibilities. The primary purpose . . . is to offer students a quality education. Furthermore, Barry commits itself . . . to providing community service . . . within a more caring-environment. Barry strives to afford the opportunity to examine the fundamental questions of human experience . . .

The following measures of mission effectiveness had a statistically significant impact on retention. (1) Student perception of Barry's effectiveness in offering quality education is measured by responses to two survey questions (see definitions of variables: Teaching quality and Teaching mission). (2) Student perception of Barry's effectiveness in affording opportunities to examine the fundamental questions of human experience is measured by responses to a survey question (see Life philosophy). (3) Although students share responsibility with the university for creating and maintaining viable clubs and organizations, a university committed to providing service within a more caring environment must provide an unusually rich and satisfying set of opportunities for students. Barry's effectiveness in providing this caring service is measured by responses to a survey question (see Club opportunities). (4) Student perception of Barry's effectiveness in providing a learning environment that challenges students to accept responsibilities is measured by responses to a survey question (see Accept responsibility). (5) Barry's success as a distinctively Catholic institution is judged by the extent to which it provides a learning environment especially suited to the academic achievement of Catholic students, controlling for all other determinants of academic outcomes.

TABLE 1. Definitions of Variables Used

Variable	Definition
Accept responsibility	• Reported agreement (agree, neutral, disagree) with the statement, "Barry contributed significantly to my capacity to accept personal, ethical, and spiritual responsibilities more fully."
Age	• Student's age at enrollment
Barry choice	• Student response to the question, "Among the colleges and universities to which I applied, Barry was my (1) first choice, (2) second choice, (3) third choice, (4) fourth choice, (5) less than fourth choice
Catholic	• Dummy variable identifying students who reported their religion as Catholic
Class placement	• Reported satisfaction (satisfied, neutral, dissatisfied), by students with below average grades, with class assignment as a result of placement testing.
Club opportunities	• Reported satisfaction (satisfied, neutral, dissatisfied), by students with above average grades, in response to the question, "As a student at Barry, indicate your level of satisfaction with opportunities to participate in clubs and organizations on campus.
Cost important	• Reported agreement (3 point scale), by students with below average grades, with the statement, "Cost played an important role in my decision to come to Barry."
Credits attempted	• Total credits attempted, but not necessarily completed in the first term
Expect degree	• Reported agreement (5 point scale) with the statement, "I expect to receive my degree from Barry University."
Female aid	• Amount of financial aid award accepted (in $1,000's) for female students only
First GPA	• First semester GPA at Barry
Home distance	• Distance from the student's legal, permanent residence as measured by the difference in ZIP codes between Barry and home (approximated for international students).
Housing satisfaction	• Reported satisfaction (satisfied, neutral, dissatisfied) with the student's housing arrangements either on-campus or off-campus.
Life philosophy	• Reported agreement (5 point scale) with the statement, "Barry has helped me articulate more clearly a philosophy of life."
Male dorm	• Dummy variable identifying male students who lived in on-campus housing
Orientation class	• Dummy variable identifying students who were enrolled in a one credit orientation course during their first semester
Prior credits	• Credits earned by the student at previous institutions before the first term registered at Barry
Prior GPA	• Secondary school GPA for first-time freshmen and the average of the GPA's at all previous institutions for transfer students
Resident alien	• Dummy variable identifying students whose citizenship status is resident alien
Socializing	Reported satisfaction (5 point scale) with the opportunities to make friends of the opposite sex
Spring enroll	• Dummy variable identifying students who were accepted for the Fall term but did not enroll until the Spring
Teaching mission	• Reported agreement (agree, neutral, disagree) with the statement, "Instructors use policies and teaching techniques appropriate to their students, courses, and Barry's mission.
Teaching quality	• Reported satisfaction (5 point scale) in response to the question, "As a student at Barry, indicate your level of satisfaction with the quality of teaching."
Work harder	• Reported disagreement (5 point scale) with the statement, "In general, students work hard at this university."

Results

TABLE 2. Logit Regression Results for First-Year Retention

Dependent variable: **First-Year Retention**

Independent Variable	Coefficient	Significance One-Tail	Derivative
CONSTANT	3.87706		
First GPA	1.08975	<0.0001	0.16
Credits attempted	0.10705	0.001	0.02
Barry's choice	0.90436	0.001	0.12
Resident alien	2.03179	0.002	0.30
Club opportunities*	1.17374	0.004	0.16
Male dorm	0.90883	0.005	0.13
Cost important	0.64145	0.005	0.09
Expect degree	0.48411	0.01	0.07
Housing satisfaction	0.55032	0.02	0.07
Home distance	-0.00130	0.03	0.00
Class placement	0.54570	0.03	0.07
Life philosophy*	1.07251	0.03	0.07
Female aid	0.05802	0.04	0.01

*These variables reflect institutional effectiveness at Barry.

Likelihood ratio statistic = 48.49 with 13 degrees of freedom $p < 0.005$
McFadden's Rho-Squared = 0.29

Model Classification Table

	Retained	Lost
Correct	92%	58%
Success Index	0.19	0.31
Total Correct	83%	

All predictors were statistically significant at the .05 level and eight were significant at the .01 level. All measures of goodness of fit suggest that the model fits the data well. The logit model correctly predicts the choices of 83% of the students in the sample. Compared to predictions based on the sample mean of 73% retained and 27% lost, the model increased prediction success by 19% for retained students and by 31% for students who left.

In addition, twelve variables affect retention indirectly through their influence on academic outcomes, measured by first semester GPA. OLS regression was used to estimate the impact of these

variables on GPA, see Table 3. Note that one variable, credits attempted, has both a direct effect on retention and an indirect effect through GPA. Together, the four institutional effectiveness variables explain about 18% of the variance in GPA. Since the impact of these variables on GPA is not, in itself, the focus of this study, the discussion moves immediately to the direct and indirect effects of all these variables on the probability of retention.

TABLE 3. OLS Regression Results for First Semester GPA

Dependent variable: **First Semester GPA**

Independent variable	Coefficient	Standardized Coefficient	Significance level One-Tail
Constant	-0.86906		
Prior credits	0.00964	0.265	<0.001
Prior GPA	0.63607	0.394	<0.001
Spring enroll	0.64132	0.241	<0.001
Credits attempted	0.03514	0.145	<0.001
Socializing	-0.22383	-0.192	0.001
Teaching quality*	0.20136	0.161	0.005
Teaching mission*	0.31598	0.179	0.01
Orientation class	0.20653	0.103	0.02
Age	0.02617	0.107	0.02
Catholic*	0.16791	0.089	0.02
Accept responsibility*	0.19148	0.149	0.03
Work harder	0.14512	0.140	0.04
$R^2 = 0.52$, Standard error of estimate = 0.64			

*These variables reflect institutional effectiveness at Barry.

The estimated impacts on retention for twenty-four predictors are presented in Table 4. One difficulty in comparing the impacts of qualitatively different predictors is that the notion of a "unit change" is not comparable across different variables. For instance, a unit change in GPA means a huge increase of one full grade level, while a unit change in credits attempted means a relatively modest increase in the course load of only one-third of a course. These unit changes are not equally feasible or easily attained in the institution's attempt to encourage retention. Table 4 attempts to "standardize" the estimated impacts by examining the effect of an increase of one standard deviation

for each predictor. In four cases the unit change was defined at a level more intuitively meaningful than one standard deviation.[2]

TABLE 4. Relative Strength of Determinants of Retention

Determinants of Student Retention	Derivative	Odd's Ratio	Unit of Change
Influence of Mission Effectiveness			
Opportunity to participate in clubs	9.3%	2.02	0.60
Helped me articulate philosophy of life	7.2%	2.87	0.98
Teaching appropriate to Barry's mission*	2.7%	1.20	0.53
Satisfaction with quality of teaching*	2.2%	1.16	0.69
Developed capacity to accept responsibility*	2.1%	1.16	0.70
Student is Catholic*	1.3%	1.10	0.50
Influence of other Determinants			
First semester GPA at Barry	15.6%	2.91	0.979
Barry was student's 1st, 2nd, 3rd, ... choice#	11.1%	2.31	0.924
Student is resident alien	8.9%	1.84	0.3
Cost is important factor in choosing Barry	7.9%	1.81	0.929
Credits attempted 1st semester at Barry	6.4%	1.55	3
Satisfaction with class assignment by placement test	5.9%	1.56	0.815
GPA at previous school*	5.9%	1.50	0.584
Expect Barry degree	5.8%	1.55	0.943
Satisfaction with housing arrangements	5.5%	1.51	0.754
Male living in dorm on campus	4.9%	1.40	0.372
Delayed matriculation until spring semester*	3.6%	1.28	0.35
Distance from home (100's zip codes)	-3.3%	0.80	175
Satisfaction with dating opportunities*	-2.9%	0.82	0.821
Student works harder than others*	2.0%	1.15	0.869
Took orientation class*	1.5%	1.11	0.471
Amount of aid accepted for women	0.8%	1.06	$1,000
College credits from prior schooling*	0.5%	1.03	3
Age at matriculation*	0.4%	1.03	1

* These variables have only an indirect impact on student retention through their impact on first semester GPA.
\# The lower Barry ranked among institutions to which the student applied, the greater the probability of retention.

The estimates in Table 4 indicate that strategies like (1) improving first semester academic performance, (2) creating a cost advantage for the institution, and (3) encouraging students to take a heavier course load in the first semester are powerful enhancements to retention. Compared to the whole spectrum of predictors, the measures of institutional effectiveness have a moderate influence on retention. The average derivative for the effectiveness measures is 4.1 compared to 5.2 for the other predictors. Improvements in institutional effectiveness appear to have more influence on retention than established retention strategies like a first-year student orientation class.

Two predictors merit special remark. First, if the student is enrolled at an institution that was initially a relatively low ranked choice, circumstances apparently prevented attendance at a higher ranked institution. Consequently, the student perceives himself/herself as having a relatively narrow range of available choices and is more likely to be retained. Second, Barry markets itself as an international university and is successful in establishing a comfortable environment for foreign students. Consequently, resident aliens are more likely to be retained at this institution.

What do these estimates suggest regarding the relative importance of the theoretical variables shown in Figure 1? Judging by the derivative (reported in brackets after the variable name) of first semester GPA [16], academic outcomes are the most important determinant of the retention. In addition to the direct effect, below average academic performance contributes to attrition by making the student more likely to act on other dissatisfactions. For instance, students who disagree that cost was an important consideration in their college choice are less likely to be retained. These students probably have a wider range of available choices precisely because cost is not a consideration. Figure 2 shows that cost sensitivity has a greater impact on students with below average grades in their first semester.

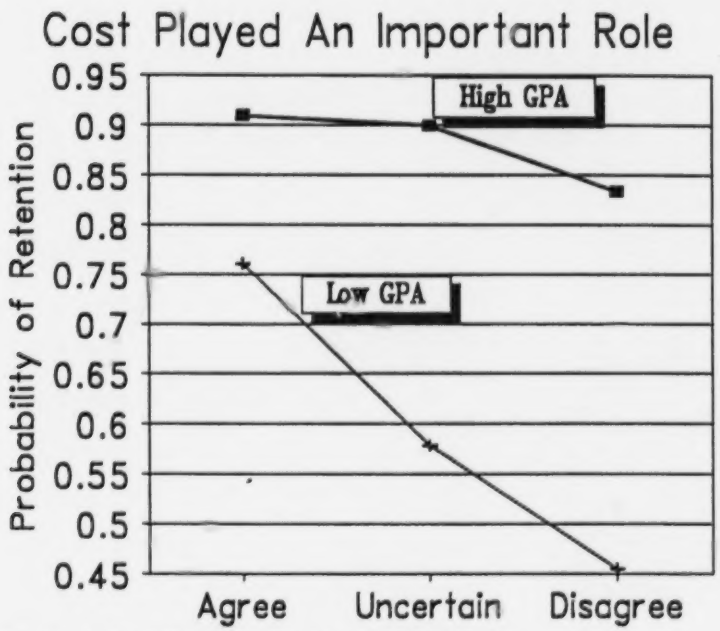

Fig. 2. GPA affects impact of cost on retention

On the next tier of retention impacts (derivatives again in brackets) are:

- environmental factors measured by the range of choices available to the student (Barry choice [11] and Cost important [8]),
- the institution's effectiveness in delivering the social/psychological aspects of the mission measured by student perception (Club opportunities [9] and Life philosophy [7]), and
- the students' motivation, personal goals, and institutional expectations measured by credits attempted, expectations of receiving a degree, and, for Barry as an international university, citizenship status (Credits attempted [6], Expect degree [6], and Resident alien [9]).

Social/psychological outcomes, unrelated to the mission, have smaller impacts on retention as ascertained by housing arrangements (Housing satisfaction [5] and Male dorm [5]). Socio-economic background (Spring enroll [4], Home distance [3], Female aid [1], and Age [< 1]) and the institution's effectiveness in delivering aspects of the mission which enhance students' GPA (Teaching mission [3], Teaching quality [2], Accept responsibility [2], and Catholic [1]) have even smaller impacts on retention.

Some variables expected to be important predictors based on the research literature were not statistically significant at Barry. These included (1) reported success in establishing "significant friendships" at Barry, (2) educational aspirations expressed in terms of the highest degree the student expects to obtain, (3) agreement that parents would be disappointed if the student did not graduate from Barry, (4) academic integration as measured by progress in choosing a major, and (5) congruency between Barry and the student as measured by agreement that Barry is a place where the student can develop career interests.

Of interest are some of the non-significant variables related to institutional effectiveness at Barry. Student perception of quality education was not statistically significant when measured by (1) satisfaction with class size, (2) satisfaction with the variety of classes available, (3) satisfaction with the relationship with the faculty outside class, (4) agreement that the learning environment encourages achievement, or (5) agreement that Barry contributed to the student's capacity to analyze and evaluate books more effectively. Student perception of effectiveness in providing service within a more caring environment was not statistically significant when measured by (1) satisfaction with academic advising, (2) agreement that faculty respect students, or (3) agreement that administrators are communicative, caring, and just.

It is interesting that the only measure of satisfaction with social interactions (among seven contained in the first survey) that had a positive effect on retention was the one that involved activities available only through official university sponsorship, i.e., participation in student clubs and organizations. Other social interactions represent risk factors, for instance, overly-satisfying dating opportunities and off-campus housing for young men.

Conclusions

Academic education is a university's primary mission and its most important product. Academic outcomes are the most important single determinant of retention; however, institutional

effectiveness in the academic area is but one determinant of GPA, contributing only one-third of the explained variance. Academic preparation and student motivation have greater impacts on academic outcomes. If students' classes match their academic preparation and faculty members provide satisfactory classroom teaching, retention will be higher because students get better grades. Faculty effectiveness in the classroom has more impact on retention than effectiveness as an advisor, effectiveness in providing academic help during office hours, or effectiveness as a mentor outside class. However, since the impact of institutional effectiveness on the academic mission has only an indirect effect on retention, through first semester GPA, institutional academic effectiveness has less influence on retention than the community building and personal growth missions of the institution.

The majority of institutional effectiveness retention factors, four out of six, operate through academic outcomes, but among the measures of institutional effectiveness the two biggest effects are from areas that facilitate social/psychological growth. Perhaps because effectiveness in the academic mission is a goal shared by all colleges and universities it has less impact on creating commitment to a particular institution. Or perhaps students have so little experience of institutions that they do not know which is academically better than another, so the source of institutional commitment is in the affective domain more than the cognitive domain. Effectiveness in missions, like caring service and religion, that differentiate Barry from many other institutions and lie in the affective domain, have a greater potential for creating institutional commitment and thereby encouraging retention.

Institutional effectiveness, by itself, cannot turn the attrition tide, and improved retention must not be the primary motivation for institutional effectiveness. However, improved retention is a significant outcome that will reward effective efforts to close the gap between aspiration and performance--especially in the unique areas of the institution's mission that differentiate it from other institutions.

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ENDNOTES

1. The SYSTAT logit module was used for the analysis in this paper.

2. For credits attempted and credits earned from a previous institution, a unit change was defined as 3 credits representing an additional course. For age at matriculation, a unit change was defined as one year. For financial aid accepted, a unit change was defined as an additional $1,000.